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GCC STANDARDIZATION ORGANIZATION (GSO)

FINAL DRAFT

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جبنةامينتال
Emmental cheese

Prepared by :
Gulf technical committee for standards of food and agriculture products

This document is a draft Gulf standard circulated for comments, it is therefore, subject to change, and may not be referred to it as a Gulf standard, until approved by the board of directors

ICS : 67.100

FORWARD

The Gulf Standardization Organization for GCC (GSO) is a regional organization which consists of the National Standards Bodies of GCC member States. One of GSO main functions is to issue Gulf Standards / Technical regulation through specialized technical committees (TCs).

GSO through the technical program of committee TC NO.5 "Gulf technical committee for standards of food and agriculture products " has prepared " Emmental cheese " the draft standard has been prepared by the state of Qatar. The draft standard has been prepared based on relevant ADMO, International and national foreign standards and references.
This standard has been approved as Gulf standard without any technical modifications by GSO Board of Direction in its meeting No…/…. ……held on / / / H, / / G

Emmental cheese

1. Scope :

This Gulf Standard applies to Emmental cheese intended for direct consumption or for further processing in conformity with the description in this Standard.

2. Complementary standards :

2.1 GSO (9) " Labelling of prepackaged foodstuffs ".

2.2 GSO (21) " Hygienic regulations for food plants and their personal".

2.3 GSO (150) " Expiration periods at food products ".

2.4 GSO (171) " Methods for the chemical analysis of cheese ".

2.5 GSO (179) " Methods of microbiological examination of cheese".

2.6 GSO (323) " General requirement for transportation and storage of chilled and frozen food ".

2.7 GSO (570) " Methods for the physical and chemical analysis of milk ".

2.8 GSO (839) " Food packages – Part 1 : General requirements ".

2.9 GSO (988) " Limits of radioactivity levels permitted in foodstuffs – Part 1 ".

2.10 GSO (1016) " Microbiological criteria for foodstuffs – Part 1 ".

2.11 GSO / CAC/MRL 2 " Maximum Residue Limits for Veterinary Drugs in Food ".

2.12 GS …. " Cheese ".

3. Definitions :

Emmental cheese :
Is a ripened hard cheese ready for consumption, conformity with to the Gulf standard mentioned in item (2.12), the ripening procedure to develop flavour and body characteristics is normally from 2 months at 10–25° C (depending on the extent of maturity required) . Alternative ripening conditions (including the addition of ripening enhancing enzymes) may be used, provided a minimum period of 6 weeks is observed and provided the cheese exhibits similar physical, biochemical and sensory properties as those achieved by the previously stated ripening procedure.

4. Requirements :

The following requirements shall be met in the product :

4.1 It shall be produced according to the hygienic standards and regulations mentioned in the Gulf standards given in item (2.2).

4.2 Cows' milk or buffaloes' milk, or their mixtures, and products obtained from these milks, provided that it must be comply with Gulf standard concerned to each.

4.3 The body of cheese has a ivory through to light yellow or yellow colour and an elastic, sliceable but not sticky texture, with regular, scarce to plentiful distributed, mat to brilliant, cherry to walnut sized (or mostly from 1 to 5 cm in diameter).

4.4 gas holes, but few openings and splits are acceptable.

4.5 Emmental is typically manufactured as wheels and blocks of weights from 40 kg or more but individual countries may on their territory permit other weights provided that the cheese exhibit similar physical, biochemical and sensory properties.

4.6 The cheese is manufactured and sold with or without a hard, dry rind. The typical flavour is mild, nut-like and sweet, more or less pronounced.

4.7 The following ingredients are permitted to use in the production :
4.7.1 Starter cultures of harmless lactic acid and/ or flavour producing bacteria and cultures of other harmless micro-organisms
4.7.2 Rennet or other safe and suitable coagulating enzymes
4.7.3 Sodium chloride and potassium chloride as a salt substitute;
4.7.4 Safe and suitable processing aids;
4.7.5 Potable water;
4.7.6 Safe and suitable enzymes to enhance the ripening process;
4.7.7 Rice, corn and potato flours and starches: these substances can be used in the same function as anti-caking agents for treatment of the surface of cut, sliced, and shredded products only, provided they are added only in amounts functionally necessary as governed by Good Manufacturing Practice
4.7.8 The product shall be free from big products and its derivatives.

4.8 The composition of the product must be comply to table (1)

Table (1)
Composition of Emmental cheese

Milk constituent	Minimum content (m/m)	Maximum content (m/m)	Reference level (m/m)
Milkfat in dry matter:	45%	Not restricted	45% to 55%
Dry matter:	Depending on the fat in dry matter content, according to the table below :		
	Fat in dry matter content (m/m):		Corresponding minimum dry matter content (m / m)
	Equal to or above 45% but less than 50%:		60 %
	Equal to or above 50% but less than 60%:		62 %
	Equal to or above 60%		67 %
Propionic acid in cheese ready for sale:	minimum150 mg/100g		
Calcium content:	minimum 800 mg/100g		

4.9 Emmental is obtained by microbiological fermentation, using thermophilic lactic acid producing bacteria for the primary (lactose) fermentation; the secondary (lactate) fermentation is characterized by the activity of propionic acid producing bacteria.

4.10 Food additives :
Those food additives listed in table (2) used and only within the functions and limits specified

Table (2)
Food additive that are permitted to use

Additive functional class	Justified use	
	Cheese mass	Surfaces / rind treatment
Colours	X[1]	-
Acidity regulators	X	-
Preservatives	X	X
Anti-caking agents	-	X[2]

1 Only to obtain the colour characteristics, as described in Section 3.

2 For the surface of sliced, cut, shredded or grated cheese, only.

X The use of additives belonging to the class is technologically justified.

– The use of additives belonging to the class is not technologically justified.

INS No.	Name of additive	Maximum level
colours		
160a (i)	beta-Carotene (synthetic)	35 mg/kg singly or in combination
160a (iii)	beta-Carotene (*Blakeslea trispora*)	
160e	beta-apo-8'-Carotenal	
160f	beta-apo-8'-Carotenoic acid, methyl or ethyl esters	
160a (ii)	Carotenes, vegetable	600 mg/kg
160b (ii)	Annatto extracts – norbixin based	25 mg/kg
preservatives		
1105	Lysozyme	Limited by GMP
200	Sorbic acid	1 000 mg/kg based on sorbic acid. Surface Treatment only
201	Sodium sorbate	
202	Potassium sorbate	
203	Calcium sorbate	
234	Nisin	12.5 mg/kg
235	Pimaricin (Natamycin)	2 mg/dm2 Not present at a depth of 5 mm. Surface Treatment only
251	Sodium nitrate	35 mg/kg singly or in combination (expressed as nitrate ion)
252	Potassium nitrate	
Acidity regulators		
170(i)	Calcium carbonate	Limited by GMP
504(i)	Magnesium carbonate	Limited by GMP
575	Glucono delta-lactone	Limited by GMP
Anticaking agents		
460(i)	Microcrystalline cellulose	Limited by GMP
460(ii)	Powdered cellulose	Limited by GMP
551	Silicon dioxide, amorphous	10 000 mg/kg singly or in combination Silicates calculated as silicon dioxide
552	Calcium silicate	
553(i)	Magnesium silicate	
553(iii)	Talc	
554	Sodium aluminosilicate	
556	Calcium aluminium silicate	
559	Aluminium silicate	

4.11 The microbiological limits for the product shall be as given in the Gulf standard mentioned in (2.10).

4.12 The radiation limits for the product shall be as given in the Gulf standard mentioned in (2.9) .

4.13 The Maximum Residue Limits for Veterinary Drugs in the product shall be as given in the Gulf standard mentioned in (2.11) .

5. Sampling :

Samples shall be taken according to the Gulf standard mentioned in (2.7).

6. Methods of the test

Methods of the test shall be according to the Gulf standards mentioned in (2.4) and (2.5).

7. Packaging, translation and storage :

7.1 The product shall be packaged in suitable hygienic tightly closed containers to protect it from contamination and spoilage accordance with the Gulf standard mentioned in (2.8).

7.2 The product must be translation and storage accordance with the Gulf standard mentioned in (2.6).

8. Labelling :

Without prejudice to what is stated in the Gulf standards mentioned in (2.1) and (2.3), the following information shall be labelled on the product in packages or in bulks :

8.1 Name of the product.

8.2 Fat content and the product type of fat content.

8.3 Country of origin.

8.4 Source of rennet.

8.5 If the product is processing from dry or concentrated milk, the name of the product must be written with clear font and in the same size of the production name (processed from dry or concentrated milk).

8.6 The expiration dates shall be declared on the label of the package in an uncoded manner [Day-Month-Year] for food products as it mentioned in item (2.3).

APPENDIX

Information on usual patterns of manufacturing Emmental
The information below is intended for voluntary application by commercial partners and not for application by governments.

1. Appearance characteristics

Usual dimensions:

Shape:	Wheel	Block
Height:	12–30 cm	12–30 cm
Diameter:	70–100 cm	–
Minimum weight:	60 kg	40 kg

2. Method of manufacture

2.1 Fermentation procedure: Microbiologically derived acid development.

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بـاحث مواصفـات غذائـــية